

MAY/89

ZX-Appeal

Vancouver sinclair
users group

next meeting:

KILLARNY COMMUNITY CENTRE
6260 KILLARNY STREET
VANCOUVER

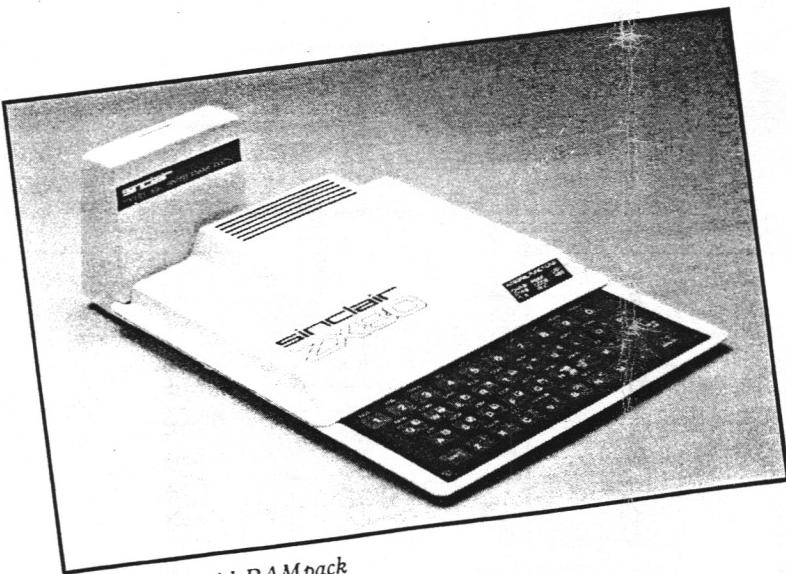
FRIDAY; 7:00PM

May 12, 1989

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ZXApeal is a monthly newsletter put out by the Vancouver Sinclair Users Group. For more information on the group and ZXApeal see the backcover.



ZX80 with RAM pack

THIS ISSUE.....

Hooray, Hooray, 1st of May, outdoor computin' starts today!!

Just a couple of club submissions this month but they come from esteemed members: Fred N. is back with Project #2 from the "ZX Breadboarder"; and we are pleased to receive a submission from Kristian Boisvert. Kristian together with his brother Eric are the creative minds behind "Byte Power". And now for something completely different we reprint in this issue an article not directly related to Sinclair machines but certainly of interest (and maybe humorous) to any die-hard programmer. You might think you aren't in this category but if you can recall sitting at your machine and suddenly realizing it was two in the morning then think again. Part Two of the neat 2068 program is continued from last time. If space allows we'll also reprint one or two other "gems" from the exchange file. We also reprint a letter received from Tim Woods of Time Designs. I'm glad to hear that Tim has bounced back and plans to stay with it for a while yet. Nice to hear from you, Tim.

...meeting date!

FOR SALE:
Dave Mumford has a
bunch of Timex gear for sale.
Software, hardware, etc.
call him at
434-9757

BUYER BE WARE

We find it difficult to report the following but must do so in fairness to the Sinclair Community. VSUG member Jim Horne set up shop as Insomniac Electronics and sent out notices that he would be taking over from Fred N.'s Silicon Mountain Electronics after Fred closed down. Disturbing reports are now starting to trickle in from VSUG members as well as other TS users across Canada and the U.S. saying that Jim had been sent orders and money but nothing had been received in return. Many attempts have been made to contact Jim regarding this and other matters but to date no success. The Vancouver Sinclair Users Group does not recommend anyone ordering anything from Insomniac Electronics until contact is made with Jim to find out what is going on. VSUG will try to mediate with Jim about unfilled orders but of course isn't connected with Insomniac Electronics and can't take any responsibility for Jim's lack of performance.



MINUTES OF APRIL MEETING

(Our Humble Scribe was not able to make the meeting so the interesting bits were noted by Chung Chow and typed up by Gerd, the Prez, Breunung...Ed)

The meeting started with 13 and ended with 16 members present.

Rusty Townsend volunteered to be our new Newsletter Publisher.

Ken Abramson told us about discussions on "Cold Fusion" on the Simon Fraser University bulletin board. Professors and teachers from all over North America are taking part and Ken, who has access because he is a science teacher, circulated several printouts of text from the bulletin board.

The meeting was called to order at 7:36pm.

Editor's Report:

-mention was made of the article submitted by Fred N.

-pages 2 and 3 of the last newsletter were done with the new desktop publishing program for the 2068.

Treasurer's Report:

-\$1,234.91 in the club kitty!

-it was decided by majority vote to purchase a disk drive system for the

TS1000 Library from Jim Horne.

President's Report:

-Vashon Island Sinclair Timex Association's TS1000 Public Domain Software Library Index is available. They are doing a first class job of filling up a top quality C60 with programs on both sides for a nominal fee of US\$4.00 (Gerd sent them 5 to cover the extra postage to Canada). Program submissions to the library are invited. Contact Gerd for details.

-a working prototype of a tape-to-tape software dubbing device was received from Fred N. and shown to the meeting. (The article about this device will be in the next issue of the newsletter...Ed)

IN RECOGNITION OF THE OVERWHELMING GENEROSITY SHOWN TO VSUG BY FRED IT WAS UNANIMOUSLY DECIDED BY ALL PRESENT THAT AS A TOKEN OF GRATITUDE AND APPRECIATION FRED NACHBAUR BE MADE A LIFETIME CLUB MEMBER.

Hardware Group Report:

- a social farewell party was held for Eric Sakara who has accepted a transfer to Winnipeg, Manitoba.

TS1000 Book Library Report:

-see Mar/Apr '89 issue of your newsletter for complete listing. Phone or write Gerd for your book borrowing needs. Mail requests to borrow from the library accepted from out-of-towners.

TS1000 Tape Library Report:

-soon to be catalogued same as TS1000 book library.

-Rusty Townsend contributed 5 original programs which are new to the library - thank you, Rusty!

TS2068 Book & Tape Library Report (by Rod as Bill not able to attend):

-60 books and 90 programs are available.

Vice President's Report:

-received more printouts from Harvey Taylor from the ongoing S.F.U. bulletin board discussion on "Cold Fusion".

-participation in Group Tour of TRIUMF (Tri University Meson Facility) at the University of B.C. invited.

Harry Slot demonstrated 2 Telegraph Printers: one "hole-punch" type dated 1865 made by the Morse Company and one later model ink-type. They were used around the late 1800's in a New York City Police Precinct before being brought to Vancouver. Harry told us that years ago he hooked it up to the antique radio demonstrated here a while back and was able to print out weather reports being transmitted in morse code to the far north.

TIME designs

CLUB Z 88

PIPE LINE

29722 Huff Road Colton, Oregon 97017 Phone (503) 824-2658

Dear TIME DESIGNS Subscriber,

Your still very much on our mailing list. The mailman didn't steal your magazines, and our computer didn't "accidentally" erase your name. We haven't forgotten you.

I've really slipped behind on our publishing schedule the last couple of issues, for which I apologize. Several family matters, including the sudden passing away of my father, and health problems, forced me to take substantial "time off" from my duties here at TDM.

TIME DESIGNS has always been my hobby...something I do on the side (I also hold down a full time job besides the magazine). I still feel that it is a worthwhile project, and a necessary information link for our Timex Sinclair community.

On that note, I want to emphasize, that we have not gone out of business, nor do we have plans to. You will get every issue you have paid for.

The last few weeks, and in the months ahead, I will be concentrating on getting our magazine back on track and to better serve you. There has been, literally, an avalanche of letters, postcards, and phone calls inquiring about TDM and magazine delivery. We have tried to answer each in the order we have received them. Therefore, if it appears like we have ignored you...we have not! We have just been overwhelmed.

I have enacted just a couple of minor changes to help us catch up. The upcoming issues (for the time being) will be designated by Volume and Issue Number, rather than a bi-monthly designation. A fuller explanation and more details will be included in my next editorial.

Within just a couple of weeks after you receive this issue, you will be receiving another issue of TIME DESIGNS (Vol.5 No.1), which is ready for mailing. We will also be expediting the production of the following issue (Vol.5 No.2).

Your patience and continued support has been greatly appreciated. Without you, there would not be a TIMEX SINCLAIR magazine. In return for your understanding of my tardiness, I will continue to put out a quality magazine like you've come to expect. My files are really bursting with articles and programs...look for some good information for your favorite microcomputer.

Respectfully Yours,


Tim Woods
Editor/Publisher
TIME DESIGNS

Ted Bahr

Caffeinated soft drinks: The state of the art

Perhaps the most universally recognized tool for improving a professional programmer's productivity is C. Not the C language (after all, this is the April issue, not February) but the C additive, Caffeine.

P.J. Plauger would have us begin this review with a definition:

cafeine \kə-'fēn, 'ka-\'n [G *kaffein*, fr. *kaffee* coffee, fr. F *café*] (ca. 1828) : a bitter alkaloid $C_8H_{10}N_4O_2$ found esp. in coffee, tea, and kola nuts and used medicinally as a stimulant and diuretic.

Much has happened in the Cola wars to date, and the intent here is to bring you up to speed on what seven leading contenders have to offer today. Table 1 shows a comparison of basic features, Table 2 compares performance, and Table 3 ranks the products on a variety of tests.

Diet Coke

Diet Coke is an ably launched sequel to Coca-Cola's well-known, high-calorie drinks. It scours well in the mouth and the taste is surprisingly full-bodied for a soda drained of all sugar. As a member of the Coke family, Diet Coke places well in the performance test with 46 mg. of caffeine per can.

Diet Coke supplies the user with excellent documentation, taking care to list a variety of vitamins and minerals of which it supplies less than 2% of the U.S Daily Rec-

ommended Allowances (U.S. RDA). The documentation is not perfect; however, one particular problem is sloppy indexing. Diet Coke notes that the product contains phenylalanine, a danger to phenylketonurics, but does so in tiny letters on the front of the can, not with the ingredients where one would naturally search for it (by contrast, Diet Pepsi places this information with the other ingredients in a bright red color).

A toll-free help line is provided to support all the Coke products—their commercials play in the background while you are on hold. Diet Coke is an excellent reproduction of the market leader and maintains its good performance for programmers while nodding to the increased health-consciousness of the world today.

Mountain Dew

Long the late-night programmer's favorite with 17.4% more caffeine than any member of the Coke family and over 40% more caffeine than Pepsi, Mountain Dew means business. Clearly the heavyweight choice of this review, the Dew powers its way to a first-place finish in both calories (178.8) and sugar (44.4 mg.). Its performance pales in comparison only to Jolt.

Mountain Dew's taste is sickly sweet—the refreshing images of people splashing around in ponds are clearly in reference to the ener-

gy derived from the drink's effect, not the taste. And the participants in the ads are certainly not programmers (imagine—swimming!). The scouring test was disappointing—the tiny bubbles seemed buried by high-fructose corn syrup.

Documentation was generally good, with more information revealed about chemical content than any product except Diet Coke. A toll-free help number is offered on the can and questions to the technical support staff were handled efficiently and pleasantly.

Mountain Dew is still sporting its peace-and-love 1960s logo. The outdated packaging combined with levels of caffeine and sugar that show almost total disregard for the 1980s health-consciousness reveal parent Pepsico's intent to market Mountain Dew as a niche product. With only Jolt to battle head-to-head on the high end, that's not such a bad idea.

Pepsi

Pepsi may be the choice of a new generation, but definitely not a new generation of programmers. Finishing dead last in performance and buried in the middle of the pack with respect to calories, Pepsi is a generally uninspired product. The user interface (taste) is distinctive, but its caffeine engine lacks the punch of the other products we surveyed.

Pepsi offers a toll-free help line

definitely qualifying as a "boutique" soft drink, Dr. Pepper's unique user interface qualified it for review. Bottled by Pepsi, Dr. Pepper has had little national advertising in the past few years, being seen as a perennial big seller in Texas and a fancy alternative to root beer.

Despite this, Dr. P weighs in as a reasonable choice for programmers. The taste is somewhat lemony, light, and fruity. Documentation is good, but Dr. P lacks a toll-free number for support. When I did call technical support, the Pepper People seemed confused. I bounced seven times before finding the right person at the right number. However, once I got there, support was excellent and very cordial.

Although Dr. Pepper cannot be recommended outright due to its mediocre performance, slipping a few in between a long night of Classic Cokes may be just the change you need.

Jolt

Taking on the established Cola giants is a brash move for a little company in Rochester, N.Y., and Jolt is playing its role as spoiler to the hilt. In the face of a huge tide of "caffeine-free" soft drinks, Jolt

boasts that it has "all the sugar and twice the caffeine." On the surface, at least, it seems as if the programmer's ship has come in.

Jolt's user interface is good, containing the bite and "look and feel" of Classic Coke and winning the scouring test. Performance is stellar with 32% more caffeine than Mountain Dew, 55% more than the Coke family, and a whopping 85% more than Pepsi. Unfortunately, none of these percentages back up the slogan aimed most directly at the programming market: "twice the caffeine."

While documentation is adequate, technical support was rather dismal. Jolt had the ambience of a small company, with the receptionist answering my questions in an annoyed manner. She said the company doesn't release information on sugar content, which is odd for a firm that boasts about it on the can. When pressed about the "twice the caffeine" claim, she said it referred to sodas other than the ones we tested but wouldn't reveal which ones.

Despite a shaky feeling about the company's ethics, programmers will find much to like in a can of Jolt. The only side effect may be too much of a good thing—the Grindstone test left me unable to

bear the sight of a monitor, and soon found me lurching from lane to lane at 80 mph on Rte. 101, alternately screeching at songs on the radio and babbling incoherently to myself about RISC chips. Use Jolt with caution.

The Winners

A close look at the seven contenders in this review confirmed some suspicions and raised others. Pepsi's performance rated too poorly to recommend, and Dr. Pepper's only real benefit is its unique user interface.

Any member of the Coke family can be recommended for general-purpose long bouts of coding and the company is to be lauded for maintaining performance levels in its newest releases. Jolt, the hands-down winner in pure performance, is too jarring to be recommended for prolonged use, but can be excellent for short bursts or quick patches. Based on overall excellence, the winner and sultan of swig for programmer productivity is still Mountain Dew. ■

Ted Babr is a frustrated writer who wound up as publisher of Embedded Systems Programming. He greatly prefers iced lattes to any of the soft drinks reviewed here.

TABLE 3.

Additional rankings (1-10) 1—Excellent, 10—Poor

	Classic Coca-Cola	Coca-Cola	Diet Coke	Mountain Dew	Jolt	Pepsi	Dr. Pepper
Compatibility with UNIX programmers	2	6	3	1	4	7	5
Scouring effect	4	2	3	7	1	6	5
Wetstone ¹	3	2	1	5	4	6	7
Grindstone ²	3	4	5	2	1	7	6
ANSI conformity ³	3	5	4	1	2	7	6
Sleeve of Eratosthenes ⁴	4	3	7	1	2	5	6

Notes

1. Thirst-quenching.
2. Teeth grinding after one six-pack in a two-hour period.
3. American Neurological Speed Institute.
4. Staining power test conducted on standard Beefy T-shirt.

and has adequate documentation, but finished at the bottom of the heap in the Grindstone (teeth-grinding after one six-pack slurped down in a two-hour period), ANSI (American Neurological Speed Institute) conformity, and compatibility with UNIX programmers. Although drinking Pepsi while chained to a 100,000-line Ada program for 36 hours will not make you a raving maniac, it probably won't keep you awake either. John Sculley left for Apple years ago, and we cannot recommend this product for serious programmers.

New Coke

Coca-Cola's new upstart is a worthy alternative to sleeping at normal hours. It placed second in both the scouring test and the Wetstone (thirst-quenching). The kid brother

to Classic (real) Coke has a taste somewhere between the thinner, less-sweet Diet Coke and the heavy syrup of the original. Despite its less-sugary taste, Coke (its real name) actually has more carbohydrates than Classic Coke, leading this reviewer to wonder if the programmers who created New Coke were drinking Pepsi while they wrote the algorithms.

Coke's performance matches its siblings at 46 mg. of caffeine per can, topping all but the specialty pops aimed directly at software developers. With three relatively high-performance products to choose from in the Coke family, a programmer really can have it all.

Classic Coke

Also known as "real Coke," this product seems to be adrift in a sea

of specialized competition. Various tests provided some pretty mediocre scores for what has traditionally been considered by the general public the most high-powered cold liquid stimulant (unless you favor cold espresso).

Documentation is thin for Classic Coke drinkers and thus tends to favor users who have some familiarity with the product. What's more, the toll-free help number was not printed on any of the cans we tested! While clearly a stalwart and founding member of the caffeine collection, advantages offered by a number of competitors may be worth a taste before settling on the real thing.

Dr. Pepper

While barely edging out Pepsi in caffeine performance level and

TABLE 1.

Comparison of basic features

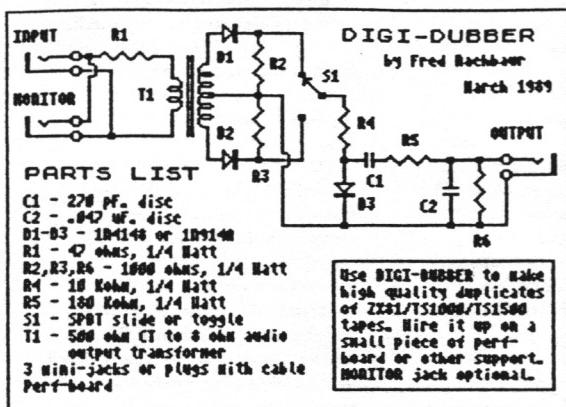
	Classic Coca-Cola	Coca-Cola	Diet Coke	Mountain Dew	Jolt	Pepsi	Dr. Pepper
Carbonated water	Yes	Yes	Yes	Yes	Yes	Yes	Yes
High-fructose corn syrup/sugar	Yes	Yes	No	Yes	Yes	Yes	Yes
Caramel color	Yes	Yes	Yes	No	Yes	Yes	Yes
Phosphoric acid	Yes	Yes	Yes	No	Yes	Yes	Yes
Caffeine	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Citric acid	No	No	Yes	Yes	Yes	Yes	No
Sodium benzoate ("a preservative")	No	No	No	Yes	No	No	Yes
Potassium benzoate	No	No	Yes	No	No	No	No
Natural flavorings	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Proud sponsor of the U.S. Olympic Team	Yes	Yes	Yes	No	No	No	No
All aluminium can	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Toll-free help number	Yes	Yes	Yes	Yes	No	Yes	No

TABLE 2.

Performance

	Classic Coca-Cola	Coca-Cola	Diet Coke	Mountain Dew	Jolt	Pepsi	Dr. Pepper
Calories (per 12 fl.oz.)	144	154	0	179	170	159	144
Sugar (grams/12 fl.oz.)	37.20	40.00	.30	44.40	NA	39.60	38.00
Caffeine (mg/12 fl.oz.)	46.00	46.00	46.00	54.00	71.20	38.40	40.80

THE ZX BREADBOARDER PROJECT 2: THE DIGI-DUBBER



THE AMAZING DIGI-DUBBER

I'm sure that the USUG finds itself in a bit of a predicament. I loaned my entire collection of ZX81 programs, pictures and other files. How would one librarian make copies of well over 500 files, without growing old before the project is completed?

In these days after the gold rush, we all could benefit from a quick and painless way of making copies of library tapes. There are several options:

- 1) Use an attenuator cable (available from Radio Shack) to copy from one deck to another.
- 2) Use a home stereo or "boom-box" double cassette deck to make an audio dub.
- 3) Load each program into the computer, then save it back to another tape.

Option #3 is by far the most reliable. The reason is that audio dubs don't really do justice to digital signals. If you 'scope the output of a typical cassette deck, you'll find that the amplitude of the pulse train is by no means constant. This "sagging" effect becomes more pronounced when making an audio copy. Furthermore, drop-outs tend to be aggravated, often to the point where the copy simply doesn't work.

What we need is an "attenuator cable" that emulates the behavior of the computer in saving/loading tape signals. DIGI-DUBBER does exactly that. The signal on copy made using DIGI-DUBBER is indistinguishable from a signal generated by the ZX81 directly.

Figure 1 shows the schematic diagram of DIGI-DUBBER. Here's how it works.

Resistor R1 limits the current into the input transformer, T1, and makes the input to DIGI-DUBBER look mostly resistive (omitting it caused bizarre spurious responses, presumably

Transformer T1 does several things. Most importantly, it isolates the two cassette decks, avoiding any possibility of "ground loop" problems. It also boosts the signal voltage, helping to insure that we can process the analog signal into a good approximation of a (digital) square wave. Further, its limited frequency response is used to advantage, to help prevent both low-frequency and high-frequency noise from reaching the recording deck.

The signal from T1 is then half-wave rectified using diode D1 and resistor R2 (or D2 and R3). The use of a rectifier on both halves of T1's secondary keeps its current (and therefore the current reflected back into the primary) symmetrical, reducing distortion due to non-linearity. Switch S1 selects the "input phase;" in other words, whether we're selecting the positive or negative excursions of the signal.

The reason for this switch is that most decks will falsely give an extra pulse in each pulse-train in one phase (usually but not always the negative phase). This corruption leads to later difficulty in loading. I'll describe later how you determine the proper setting for your decks.

The rectified signal is then clipped by resistor R4 and diode D3. Across D3 we now have a constant-amplitude square wave (or reasonable facsimile thereof).

Finally, capacitors C1 and C2 and resistors R5 and R6 provide a two-pole filter that matches the transfer characteristic of the similar network in the ZX81's SAVE circuitry. Going to the dubbing deck we thereby have a signal that "looks" as if it were being sent by a stock ZX81.

Note that DIGI-DUBBER is completely passive; it does not need a source of DC power, as did my earlier "Load conditioner" designs.

BUILDING DIGI-DUBBER

Construction is straightforward. I built mine on a piece of perf-board. Transformer T1 is readily available from Radio Shack and elsewhere. It is a 500 ohm (center-tapped) to 8 ohm "transistor audio output transformer," used in reverse. I used a sub-mini version rated at 0.1 watt, but just about any size should work fine.

The diodes are the ubiquitous IN914A/IN4148 glass silicon types. Radio Shack sells them at 50 for \$3 (this is even better than the prices at most wholesale jobbers). The resistors and capacitors are similarly "garden variety."

Switch S1 can be virtually any kind of SPDT switch. I used a push-button switch salvaged from a "dead body" in the junk room of the stereo shop where I work.

Note that the "MONITOR" cable is simply an extension of the INPUT cable. This is so that you can simultaneously load the program, or use a "header-reader" program like PNR to make a listing

USING DIGI-DUBBER

DIGI-DUBBER is intended for copying tapes. It is not meant as a load-conditioner or a panacea for lousy tapes. However, if the original tape loads normally into a stock computer, DIGI-DUBBER will insure that the copy will also.

Connect the INPUT plug to the EAR jack of the source recorder. Connect the OUTPUT plug to the MIC jack of the deck being used to record the copy. Optionally, connect the MONITOR JACK to a stock 2K TS1000 (running PNR) to get a listing of program names and save/load times.

Set the playback deck's volume to about the same level as you normally use to load tapes. When using DIGI-DUBBER, it is better to err in the direction of less signal. I found settings between 5 and 7 (on a JIL JT1115) to be ideal. Too much clipping (i.e. high volume settings) may compromise the integrity of the copy by generating spurious pulses.

Start the playback deck with the source tape, and the recording deck with an object tape of the same or greater length. And away you go.

The first time you use DIGI-DUBBER, you will have to determine which of the two switch positions are appropriate for your setup. The best way to do this is with an oscilloscope. First make an original tape from a stock ZX81. SAVE a large blank array; e.g. DIM AS(12000), then SAVE "ARRAY". This will give a large section of tape with only 0's on it, making it easier to see on the scope.

Connect the 'scope's input across diode D3. Playback the portion of the tape with the steady-sounding array data, and adjust the scope's vertical gain and horizontal frequency for a steady image.

Experiment with the switch in both positions. On

```
1 REM 136 SPACES ****
*****
***** start tape **
*****
5 REM BY COFFEY/SALT/NACHBAUR
10 GOTO 201
20 FAST
30 PRINT ;CHR$ NOT USR 16514;
40 SLOW
45 LET T=0
50 IF USR 16618<100 THEN GOTO
100
55 LET T=T+1
60 GOTO 50
100 LET S=T*.4114
110 LET M=INT (S/60)
120 LET S=INT (S-60*M)
130 PRINT TAB 25+(M<10);M;" :";
"0 AND S(10);S
```

most decks, you'll find that in one position you will get four pulses in each pulse train, with a level that is largely independent of the input level. This is the correct setting. In the other position, you'll count five pulses per train, or you will count four pulses over only a narrow volume range.

If you don't have a scope, set up the system as described above and connect an earphone to the EAR jack of the recording deck. Put the recording deck into RECORD mode, and play a tape on the playback deck. Flip the switch while listening to the signal. In one position, the signal will seem louder and may appear to have a lower pitch; this is the WRONG position. In the other position, the signal will seem clearer but a little quieter; this is the PROPER position. Make note of this position.

Setting the optimum playback level can also be done using the earphone-monitor approach (or by turning the monitor switch ON on a deck that allows monitoring through the speaker). As you increase the volume from zero, there will be a relatively large range (typically from about 4 to 7) over which the signal sounds essentially the same. Beyond this, it will sound noticeable "harsher," due to clipping. Again, you could use a scope for a more scientific approach. Just below the point where this clipping starts is the ideal setting. Your recordings at this setting will be undistorted, and relatively immune to dropouts.

One final note: when copying library tapes, or any tape for that matter, be careful with head azimuth alignment. Align the recording deck to a standard test tape, or failing that, to a GOOD QUALITY pre-recorded audio tape. The noisier, the better; heavy-metal is great for setting azimuth because of all the high-frequency noise.

Adjust the playback deck's head to the tape being copied. It is therefore good practise to always use the same decks for play and record; the record deck's azimuth alignment will be "known good," and the playback deck's setting will "slop" as required to match the source tape.

PROGRAM NAME READER

Prints name and loading time of ZX81 files
POKE data table into 1 REM

```
135 GOSUB 300
140 GOTO 20
200 SAVE "PNR"
201 SLOW
202 PRINT " PROGRAM NAME READ
ER, V3", "***** start tape **
*****
203 IF USR 16618<2 THEN GOTO 20
3
205 GOSUB 300
210 PRINT "PROGRAM NAME";TAB 26
;"TIME"
212 GOSUB 300
215 GOSUB 300
220 GOTO 20
300 SCROLL
310 PRINT AT 21,31;" ";AT 21,0;
320 RETURN
```

```
229:205:136:064:024:251:014:001:
006:000:062:127:219:254:211:255:
031:048:073:023:023:056:040:016:
241:241:186:210:229:003:098:107:
205:136:064:203:122:121:032:003:
205:228:064:035:023:048:241:201:
052:021:033:009:064:080:205:136:
064:113:205:252:001:024:246:213:
030:148:006:026:029:219:254:023:
203:123:123:056:245:016:245:209:
032:004:254:086:048:178:063:203:
017:048:173:201:201:167:040:187:
207:012:245:230:063:215:241:201:
001:000:000:017:000:016:027:122:
179:200:219:254:007:048:247:003:
027:122:179:200:219:254:007:056:
247:024:235:000:000:000:000:000:000:
```

```

3404 LET T1=R(I+1,1): LET T2=R(I
+1,2)
3406 IF T2<R(J,2) THEN GO TO 341
3408 LET R(J+1,2)=R(J,2): LET R(
J+1,1)=R(J,1)
3410 LET J=J-1
3412 IF J>1 THEN GO TO 3406
3414 LET R(J+1,2)=T2: LET R(J+1,
1)=T1
3416 NEXT I
3418 FOR I=1 TO NW
3420 LET Q(I)=R(I,1)
3422 NEXT I
3424 LET MF=0: LET WA=NW: LET FU
3426 LET DI=1
3428 PRINT AT 18,8; INK 2;
3430 STARTING TO FILL THE GRID!!!
3432 FOR N=1 TO NC
3434 LET CP=S(N)
3436 LET CR=INT ((CP-1)/MC)+1: L
ET CC=(CP-(CR-1))*MC
3438 IF M$(CR,CC)<>P$ THEN GO TO
7000
3440 IF WA=0 THEN LET MF=0: GO T
O 6950
3442 LET M$(CR,CC)=K$
3444 LET DK=1
3446 LET IR=D(DI,1): LET IC=D(DI
,2)
4100 LET RT=1: IF IR<0 THEN LET
ET=MR
4150 IF IR=0 THEN LET RT=CR
4200 LET CT=1: IF IC<0 THEN LET
CT=MC
4250 IF IC=0 THEN LET CT=CC
4300 LET BR=CR: LET BC=CC
4350 IF (BR=RT AND IC<0) OR (BC
=CT AND IC>0) THEN GO TO 4600
4400 REM GO TO 1500
4450 LET BR=BR-IR
4500 LET BC=BC-IC
4550 GO TO 4350
4600 LET RT=1: IF IR<0 THEN LET
ET=MR
4650 IF IR=0 THEN LET RT=CR
4700 LET CT=1: IF IC>0 THEN LET
CT=MC
4750 IF IC=0 THEN LET CT=CC
4800 LET ER=CR: LET EC=CC
4850 IF (ER=RT AND IC<0) OR (EC
=CT AND IC>0) THEN GO TO 5050
4900 LET ER=ER+IR
4950 LET EC=EC+IC
5000 GO TO 4850
5050 LET UR=ER: IF BR>ER THEN LE
T UR=BR
5100 LET LR=BR: IF ER<BR THEN LE
T LR=ER
5150 LET UC=EC: IF BC>EC THEN LE
T UC=BC
5200 LET LC=BC: IF EC<BC THEN LE
T LC=EC
5250 LET PR=BR: LET PC=BC: LET X
#="""
5300 LET X#=X#+M$(PR,PC)
5350 LET PE=PR+IR: LET PC=PC+IC:
IF PR>=LE AND PE<=UR AND PC>=LC
AND PC<=UC THEN GO TO 5300
5400 LET PL=LEN(X#)
5450 LET Q0=1
5454 LET Q#=X#
5456 LET R#=K$
5458 GO SUB 5462
5460 LET P=QF
5461 GO TO 5500
5462 LET QF=0
5464 IF LEN(R$)=0 THEN RETURN
5466 IF Q0+LEN(R$)-1>LEN(Q$) T
HEN RETURN
5468 IF Q$(Q0 TO Q0+LEN(R$)-1)=
R$ THEN GO TO 5474
5470 LET Q0=Q0+1

```

```

5472 GO TO 5466
5474 LET QF=Q0
5476 RETURN
5500 FOR L=1 TO P: FOR R=PL TO P
STEP -1
5550 LET C#=X$(L TO L+(R-L+1)-1)
LET CL=LEN(C#)
5600 LET Q=1
5650 LET W=Q(Q)
5700 FOR K=1 TO 15
5701 IF W$(W,K)<>" " THEN NEXT K
5702 IF K-1<>CL THEN LET MF=0: G
O TO 6750
5750 LET MF=1
5800 FOR C=1 TO CL
5850 IF C$(C)=P$ OR C$(C)=K$ THE
N GO TO 5950
5900 IF C$(C)<>W$(W,C) THEN LET
C=CL: LET MF=0
5950 NEXT C
6000 IF MF=0 THEN GO TO 6750
6050 LET F#=W$(W,1 TO C-1)
6100 IF L>1 THEN LET F#=D#+F$: L
ET L=L-1: GO TO 6100
6150 IF R<PL THEN LET F#=F#+D$:
LET R=R+1: GO TO 6150
6200 LET PR=1: LET R=BR: LET C=B
C
6250 LET V#=F$(PR TO PR+1-1): IF
V$=D$ THEN GO TO 6350
6300 LET M$(R,C)=V#
6350 IF (R=ER AND PR>0) OR (C=E
R AND IC>0) THEN GO TO 6450
6400 LET C=C+IC: LET R=R+IR: LET
PR=PR+1: GO TO 6250
6450 IF Q=WA THEN GO TO 6550
6500 FOR I=Q TO WA-1: LET Q(I)=Q
(I+1): NEXT I
6550 LET WA=WA-1
6600 LET U(W)=1
6650 LET R=P: LET L=P: LET DK=8
6700 POKE 23692,255: PRINT "USED
WORD";NW-WA;/";NW;"";W$(W):
GO TO 6800
6750 LET Q=Q+1: IF Q<=WA THEN GO
TO 6550
6800 NEXT R: NEXT L
6850 LET DI=DI+1: LET DK=DK+1: I
F DI>8 THEN LET DI=1
6900 IF DK<8 THEN GO TO 4650
6950 IF MF=0 THEN LET M$(CR,CC)=
CHE# (INT (RND#26)+65): LET FU=F
U+1: POKE 23692,255: PRINT "USED
A FILL CHAR.";NC-N: GO TO 7050
7000 PRINT "CELLS NOT YET EXAM.
";NC-N
7050 NEXT N
7090 BEEP 2,30
7100 CLS
7150 PRINT AT 3,8; FLASH 1; INK
2;"PUZZLE COMPLETED";,""
7200 PRINT TAB 3;"PRINTER AND DI
SPLAY SECTION";,""
7250 PRINT "
WHERE DO YOU WISH THE PUZZLE
SENT?";,""
7700 PRINT TAB 4;"(1) SCREEN DIS
PLAY ONLY";,""
7800 PRINT TAB 4;"(2) SEND TO PR
INTER ONLY";,""
7900 PRINT TAB 4;"(3) SCREEN AND
PRINTER";,""
8050 PRINT "(ENTER 1,2 or 3)"
8100 INPUT A$#
8200 IF A$="#1" THEN PRINT AT 14,
OVER 1: PAUSE 120: GU TU 8400
8210 IF A$="#2" THEN PRINT AT 16,
OVER 1: PAUSE 120: GU TU 8400
8220 IF A$="#3" THEN PRINT AT 18,
OVER 1: PAUSE 120: GU TU 8550
8230 IF A$="4" THEN PRINT AT 19,
OVER 1: PAUSE 120: GU TU 8400
8350 GO TO 8650

```

```

8486 CLS
8488 FOR T=1 TO MR
8500 PRINT M$(T,1 TO MC)
8510 NEXT T
8514 PRINT
8515 IF A$="1" THEN GO TO 9950
8516 FOR T=1 TO MR
8517 LET U$=""
8520 FOR C=1 TO MC
8524 LET U$=U$+M$(T,C)
8535 LET U$=U$+" "
8536 NEXT C
8538 LPRINT
8540 LPRINT U$
8542 NEXT T
8544 IF A$="2" THEN GO TO 9951
9950 PRINT
The Words Are Hidden In EIGHT
Directions."
9951 IF A$<>"1" THEN LPRINT : LP
RINT
The Words Are Hidden In EIGHT
Directions."
9952 IF A$<>"2" THEN PRINT
VEERTICAL, HORIZONTAL, DIAGONAL,
BACKWARDS & FORWARDS.
9953 IF A$<>"1" THEN LPRINT : LP
RINT
VEERTICAL, HORIZONTAL, DIAGONAL,
BACKWARDS & FORWARDS.
9956 IF A$<>"2" THEN PRINT : PEI
NT "THE HIDDEN WORDS ARE:" : POKER
23692 255
9961 IF A$<>"1" THEN LPRINT : LP
RINT "THE HIDDEN WORDS ARE:" :
9962 IF A$<>"2" THEN PRINT : POM
P 23692 255
9963 IF A$<>"1" THEN LPRINT
9964 FOR I=1 TO NW
9966 IF U(I)<>0 THEN GO TO 9974
9967 GO TO 9970
9970 NEXT I
9972 GO TO 9986
9974 IF A$<>"2" THEN PRINT W$(I)
9975 IF A$<>"1" THEN LPRINT W$(I)
9976 GO TO 9970
9980 PRINT
9981 IF A$<>"1" THEN LPRINT
9982 PRINT : PEINT "RETURN TO M
ENU? (Y or N)"
9984 INPUT A$
9986 IF A$="Y" THEN GO TO 7100
9988 IF A$<>"N" THEN GO TO 9982
9989 STOP
9998 CLEAR : PEINT #4: SAVF "H/W
OEL.BIN" LINE 5G

```

TAPE CORRECTOR

by Kristian Boisvert

This is a tape reconditioner. I know there are quite a few around but this one is different - it works! I received some PD software from a friend and had an awful time trying to load the programs so I decided to work on the problem. I think I've found the solution.

Just type in the program and then RUN 9999 to save. To use you must have 2 tape recorders. One will "play" in the EAR of the computer and the other will record from the MIC. This program even works on programs saved in Fast Save (2+FAST, Turboloader)!

0>REN

TAPE CORRECTOR
WRITTEN BY KRISTIAN BOISVERT
COPYRIGHT 1988 BYTE POWER

100 GO SUB 1000

```
200 CLS : PRINT "TAB 9;" "TAPE CORRECTOR" "TAB 2;" "WRITTEN BY KRI  
STIAN BOISVERT" ; TAB 8; CHR$ 127; "  
1988 BYTE POWER"  
300 PRINT AT 10,0; "INSERT ORIGINAL TAPE IN TAPE" "RECODER 1 (E  
AR)"
```

400 PRINT "INSERT BACKUP TAPE
IN TAPE""RECORDER 2 (MIC) THEN
PRESS""RECORD.."

500 PRINT "PLAY TAPE RECORDER
1 THEN PRESS ANY KEY.

600 PAUSE 0: PRINT AT 10 0

111111111111

700 PRINT AT 12,4;"RECONDITION

NG SIGNAL...”

800 PRINT AT 18,4;"PRESS 'BREAK'

' TO STOP...'

900 RANDOMIZE USR ADI

1000 DATA 243,58,141,92,245,230,
3,83,244,272,51,71,70

7,87,241,230,36,31,31,31,198,8,9
5,205 B1 B2 77 81 6 11 55 14

4-181-32-248 205 A1 A2 4-154 205

,A1,A2,62,198-184-48-330 36 33 3

43, 6, 201, 205, B1, B2, 120-254, 212, 4

8, 246, 205, B1, B2, 48, 193, 6, 176, 205

, A1, A2, 48, 186, 62, 203, 184, 6, 176, 4

8,244,24,240,205,B1,B2,4,200,62,

127, 219, 254, 31, 48, 15, 169, 230, 32,
42, 615, 154

40, 242, 121, 47, 79, 122, 83, 95, 211, 254, 255, 281, 285, 287, 288

—4,33,201,231,207,20

```
1100 LET ADD=65000
1200 LET A1=ADD+77: LET B1=A1+3:
      LET A2=INT (A1/256): LET A1=A1-
      256*A2: LET B2=INT (B1/256): LET
      B1=B1-256*B2: RESTORE 1000: FOR
      F=ADD TO ADD+106: READ A: POKE
      F,A: NEXT F: RETURN
9000 REM SAVE PROGRAM
9010 SAVE "CORRECTOR": LINE 100
```

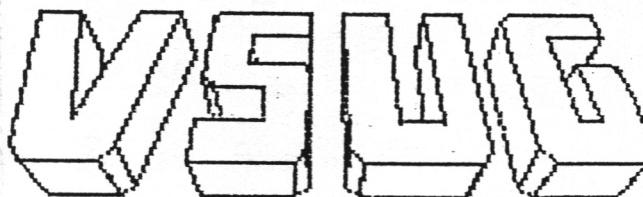
change ADD for any reasonable address
(32768-65400)

APPLE SUES APPLE

Apple Corps Ltd., owned by the three surviving members of The Beatles and John Lennon's estate, is suing Apple Computer Inc. of Cupertino, Calif., over alleged misuse of trademarks.

The dispute centres on a 1981 agreement between the two companies specifying which products could carry their respective Apple trademarks. Apple Computer agreed not to use the name "Apple" and its logo "in relation to apparatus specifically designed and intended for synthesizing music," or on any related printed matter, software or services.

Apple Corps contends that Apple Computer has marketed and licensed several such products, including Macintosh micros and an Apple compact disk player. It wants the U.S. company to remove the music component, or change the name and logo used.



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